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54 Disposable cylindrical cup for preparing or mixing paints, usable as paint gun pot

(57) The cup is remarkable for having the shape of a cylindrical tubular body (1) and a liquid-tight composition, with a side wall (2) made of cardboard, covered by a plastic film or metallic foil, and for having a fixed base element (3) with a spout which can be capped (22) and a tight-fitting top cap (14) having a means of transfer for the contents and a means of rapid fastening to the paint intake of a paint gun (24).

This invention is of interest to gun painters and paint gun manufacturers.

DESCRIPTION

[0001] The invention relates to a disposable cup intended for preparing or mixing paints in the areas of vehicle bodywork, laboratories, industries of all kinds, etc..

[0002] More generally, the invention is of interest to the paint trades in general and to vehicle repairers in particular.

[0003] In order to carry out the dosages required in the preparation of paints, primers, varnishes, etc., preparers use scales to weigh the basic constituents of the colours, and graduated bars to measure out the additives needed for the application (thinners, hardeners, etc.).

[0004] In the event that dosing bars are used, it is important that the container has a flat base and very parallel walls, in order for the volumes symbolised by lines on the bars to be accurate. Indeed, in a container which widens out, for example, one centimetre measured at the base of the container does not correspond to the same volume as one centimetre measured at the top of the container.

[0005] These dosages are usually carried out using cylindrical aluminium mixing pots of various capacities going from 0.2 litres to 10 litres or more.

[0006] These pots are the type of container which is most suitable for dosages using bars, due to their cylindrical shape. But they are expensive, due to the material employed and their method of manufacture. Their use requires hours of work and this generates pollution, since they have to be cleaned with solvents each time they are used.

[0007] There are also tin cans, with or without lids, which are also used to store paint. These are less suitable than the aluminium mixing pots, for it is not very practical to use them for pouring mixtures into paint guns, and they can not be used with water-based products.

[0008] Disposable plastic containers of the "soft white cheese pot" type can be fitted, but they are tapered. They therefore do not lend themselves to graduated bar dosages.

[0009] Not finding any suitable container, those involved in preparation work use various second-hand containers of all kinds, such as mustard pots, jam jars, bottles made from plastic material, small baby food jars, and various other containers which have already been used for other purposes.

[0010] The invention consists of creating a consumable – i.e. disposable – product, using cylindrical pots made from composite cardboard, with perfectly flat bases, and with a height equal to at least twice the diameter, with an internal lining made from plastic film or aluminium foil. The tubular body, the base and the membranes are hermetically soldered, glued or crimped. The base can be cardboard, plastic or metal.

[0011] With regard to one variant, the cylindrical paint preparation cup is especially suitable for fitting to a paint gun instead of the pot.

[0012] A detachable and hermetic lid makes it possible to conserve products awaiting use.

[0013] This cup displays the following advantages in relation to the previous state of the art:

- Because of its flat base and its well-positioned centre of gravity, this cup is very stable; its cylindrical shape allowing for good attachment. It is pleasant to the touch and not cold like metal, glass or plastic materials.

- Its perfectly parallel walls contribute to highly accurate dosages.

- A detachable lid makes it possible to conserve mixtures awaiting use

- Fitted with a suitable lid or cap, it can be mounted on a gravity-type or suction-type paint gun and can be advantageously used as a paint pot.

[0014] Its fully open top edge makes it possible to mix the various constituents properly using stirring rods.

[0015] Being disposable, it is ecological and economic, since it reduces the use of cleaning solvents and constitutes waste in harmony with the environment, for it is easy to eliminate without any dangerous residues.

[0016] Being based on paper and cardboard, it can be printed on, and can act as a carrier for information and technical and advertising messages.

[0017] Other characteristics and advantages of the invention will become clear in the following description, which is provided as a non-limitative example, with reference to the illustrations, in which:

- Fig. 1 is a perspective view of the cup as a whole

- Fig. 2 is a perspective view of the cup as a whole, seen from below

- Figs. 3 and 4 are front exploded views showing two types of cap

- Fig. 5 is a lengthwise section showing a paint gun onto which the cup according to invention is mounted, replacing the pot

- Fig. 6 is a mixed perspective sectional view showing one example of use

- Fig. 7 is a mixed front and sectional view showing the connection between the cup and the paint gun through an intermediate connecting component, with the cup being retained by snap engagement

- Fig. 8 is an enlarged sectional view representing on one side the snap engagement structures being looked at

[0018] In its basic version, shown in Figs. 1 and 2, the paint preparation cup according to invention is a cylindrical tubular body, 1, with a side surface, 2, made from cardboard, protected internally by a film made from plastic material or by a metal foil which simultaneously ensures tightness against liquids. This tubular body is closed at one of its ends by a flat base made up of a lid-type base element, 3, which is itself cylindrically sleeved and immobilised at the lower end, 4.

[0019] The wall of this base element is joined to the adjacent wall of the tubular body, 1, and is immobilised in this position by gluing or by any other method of making it integral. Tightness is improved by crimping which brings about a primary tightness arising from the fact that the edge of the lower end, 4, of the tubular body, 1, is folded back in a strip, 5, against the edge of the base element, 3. The latter is also protected by a tight film.

[0020] The upper end, 6, of the tubular body is capped by a detachable cap, 7. This cap, 7, which is cylindrical in shape and solid or pierced for liquids, has a cylindrical side surface, 8, with approximately the internal diameter of the cylindrical tubular body. It can include contours, 9, which are ring-shaped or spiral, or of any other shape, furthering the immobilisation of the cap, 7, and ensuring a certain tightness adequate for the objective aimed at.

[0021] The cap, 7, has a hollow-headed classically-shaped upper end, 10, delimited by a flanged edge, 11, developing beyond its junction with the cylindrical surface, 8, to act as a stop.

[0022] Fig. 6 illustrates the preparation of a paint using the cup according to invention. A dosing bar, 12, has been shown, indicating directly the volume occupied by the mixture, 13, which makes it possible to carry out accurate dosages easily.

[0023] The cylindrical cup according to invention is also manufactured in derived forms corresponding to the same number of direct variants intended to serve, firstly, for preparing and mixing the paint, and then as a paint pot to be mounted on a paint gun.

[0024] Two main variants are represented in Figs. 3 to 8. First, there are three simple variants with a set-in cap, 14, with a generally tapered shape, with a lower part, 15, taking the form of a cylindrical skirt, which fits onto the lid externally, either directly or through the intermediary of an oversleeve, 16, which is externally threaded or has external ring-shaped contours, 17, or through a flat ring made of rubber or of another material which is extendable and able to ensure immobilisation and tightness, immobilising itself around the upper end, 6, of the tubular body, 1.

[0025]This oversleeve, 16, can be associated with a strainer, 18, i.e., for example, to maintain a pierced protective cap or cover with a more or less fine mesh and thus to fulfil two functions simultaneously.

[0026] The cap, 14, has a flat head, 19, with a threaded connection, which is either indented, 20 (Fig. 3) or projecting, 21 (Fig. 4).

[0027] Naturally in these variants the base, 3, will include a spout, 22, which can be capped or uncovered, as an air intake, occupying the volume, 23, of the paint consumed.

[0028] Fig. 5 shows the cup according to invention in place on a paint gun, 24. Its cap, 14, is simply screwed onto the existing threaded connection, 25, provided at the point where the paint enters the body of the pistol, 24. Depending on the model of gun, this connection, 25, is either male or female. We must merely select the corresponding variant of the cup according to invention, the one shown on Fig. 3 or the one in Fig. 4, or another, in which the tubular projection of the cap has an internal thread.

[0029] Figs. 7 and 8 show a version with snap engagement of an intermediate connecting component, 26, provided for mounting the cup / pot onto the paint gun.

[0030] This embodiment has a cap, 27, appearing as a separate reusable component in the form of a funnel, onto the body of which the end of the tubular body, 1, is sleeved, maintaining a tight connection. This cap has a central outlet with a projecting central cylindrical tubular aperture, 28, having a truncated snap engagement edge, 29, including a lower stop edge, 30. This cylindrical tubular aperture end, 28, is required to be externally sleeved, with a snap engagement onto a corresponding structure of the intermediate connecting component, 26, including a threaded section, 31, towards the bottom, which is screwed onto the corresponding part of the paint inlet of the body of a paint gun, 32.

[0031] The part, 33, facing the pot of the intermediate connecting component, 26, has a snap engagement structure which conforms to that of the end of the cap outlet aperture, 27, or the mounting component of the cup, onto which the cup is sleeved , with the interposition of a sealing sleeve, 34.

[0032] An example of this type of shape is shown in detail in Fig. 8. A peripheral ring-shaped skirt, 35, delimits a cylindrical seat, 36, for the cylindrical tubular projection, 28, with a snap engagement flange of the central paint passage aperture. The cylindrical seat, 36, surrounds a central retaining sleeve, 37. The upper part of the skirt, 35, ends in a truncated flange, 38, with a shape and orientation complementary to those of the projecting tubular end, 28, of the central aperture – i.e. facing inward.

[0033] Although the gun shown is of the gravity type, the cup / pot is just as suitable, in its pierced cap version, for suction-type guns. It is sufficient to provide for a passage through the cap suitable for a suction gun plunger tube and simultaneously to provide for a means of retaining the pot.

[0034] Naturally, other technical forms can be envisaged, while still keeping within the framework and the spirit of the invention. It is sufficient that the connection should be rapid and should ensure retention and tightness.

CLAIMS

1. Disposable cup for preparing and mixing paints, distinguished by the fact that it has a cylindrical tubular body (1) with a side surface (2) made of cardboard, internally lined with a foil or a plastic film, capped in a permanent manner at one of its ends by a fixed and tight base element (3), and with a detachable cap at the other end (6) in the form of a cap which is solid or pierced for liquids.

2. Disposable cup according to Claim 1, distinguished by the fact that the fixed base (3) has a spout which can be capped (22).

3. Disposable cup according to Claims 1 and 2, distinguished by the fact that the cap (14) includes a passage lined with, or extended by, a male threaded connecting component for fitting onto a paint gun (24).

4. Disposable cup according to Claims 1 and 2, distinguished by the fact that the cap (14) includes a passage lined with, or extended by, a female threaded connection component for fitting onto a paint gun (24).

5. Disposable cup according to Claims 1 and 2, distinguished by the fact that the cap (27) is a funnel-shaped seating component, onto the body of which the end of the tubular body (1) of the cup is internally sleeved and fits tightly, the said funnel-shaped seating component including a central aperture in the form of a cylindrical tubular projection (28) which is externally sleeved onto the central cylindrical section of a snap engagement connecting component (26) having a ring-shaped peripheral seat, delimited by the cylindrical side wall of the upper central section of the connecting component and a ring-shaped skirt (35) with its upper edge facing inward, and truncated, in such a way that it co-operates with the snap engagement edge of the projection (28) with a view to temporary immobilisation with a tight fit.